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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte LANE D. LEMONS and FRANK M. SIMONUTTI

Appeal 2008-2429
Application 10/682,321
Technology Center 3700

Decided: August 19, 2008

Before DONALD E. ADAMS, DEMETRA J. MILLS, and ERIC GRIMES, *Administrative Patent Judges*.

GRIMES, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 involving claims to a golf ball. The Examiner has rejected the claims as including new matter and as obvious. We have jurisdiction under 35 U.S.C. § 6(b). We reverse the new matter rejection but affirm the obviousness rejections.

BACKGROUND

The Specification discloses a "four piece solid golf ball, wherein the four layers consist of (1) a center layer or core . . . , (2) a middle layer or mantle . . . , (3) an inner cover layer . . . , and (4) a[n] outer cover layer on which dimples are molded." (Spec. 4, reference numerals omitted.)

DISCUSSION

1. CLAIMS

Claims 1-10, 13-19, 36, and 37 are on appeal. Claims 20-25 are also pending but have been withdrawn from consideration by the Examiner (App. Br.[1] 2).

Claim 1 is representative and reads:

> A golf ball comprising:
>
> a core comprising a high cis-1,4 content polybutadiene, 20 to 28 parts by weight of a co-crosslinking agent comprised primarily of a zinc salt of an unsaturated acrylate, 3 to 5 parts by weight of a metal oxide activator, and 0.8 to 1.5 parts per hundred resin of a free radical initiator;
>
> a mantle comprising a non-bimodal blend terpolymer consisting of 70 to 80% ethylene, 8 to 10.5% acrylic acid and 12 to 20% n-butyl acrylate, wherein 100% of the acrylic acid is neutralized with metal ions;
>
> a cover having an inner cover layer and an outer cover layer;
>
> the inner cover layer comprises a blend of ionomers; and
>
> the outer cover layer comprising a thermoplastic polyurethane.

2. NEW MATTER

Claims 1-10, 13-19, 36, and 37 stand rejected under 35 U.S.C. § 112, first paragraph, on the basis that Specification does not provide adequate descriptive support for the claim limitation of a non-bimodal mantle layer (Ans. 3).

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[1] Appeal Brief filed April 5, 2007. The Examiner refused to enter the Reply Briefs filed Aug. 20, 2007 and Nov. 30, 2007 (Office actions mailed Nov. 6, 2007 and Jan. 23, 2008). Those decisions can only be reviewed by petition. Appellants did not file a petition requesting review of the Examiner's decisions. Accordingly, we have not considered the Reply Briefs.

Appellants argue that the

> specification makes no mention of "bi-modal blends," but instead refers only to ***conventional (i.e., "non-bimodal blend")*** terpolymers that include carboxylic acid. As recognized by one of ordinary skill in the art, in view of the *Chen* reference, conventional terpolymers that include carboxylic acids ***are*** **non**-bimodal blends.

(App. Br. 4.)

Claim 1 recites "a mantle comprising a non-bimodal blend terpolymer consisting of" certain substituents. A terpolymer is a polymer containing only three different monomers (Chen, col. 2, ll. 45-48). A "bimodal blend" is a blend of a high molecular weight copolymer and a low molecular weight copolymer (Chen, col. 2, ll. 62-67). Thus, a "non-bimodal blend terpolymer" is a polymer containing three different monomers that is not a blend of low molecular weight and high molecular weight copolymers.

The Specification discloses, in one embodiment, that the mantle "comprises a terpolymer consisting of approximately 70% to 80% ethylene; approximately 8% to 10.5% acrylic acid; and approximately 12% to 20% n-butyl acrylate" (Spec. 6). In the working examples, the "material used for molding the mantle was a terpolymer of ~ 76% ethylene, ~ 8.5% acrylic acid, and ~ 15.5% by weight of n-butyl acrylate" (*id.* at 8). Neither description specifies that the terpolymer was a bimodal blend.

The Examiner "'bears the initial burden . . . of presenting a *prima facie* case of unpatentability.' . . . Insofar as the written description requirement is concerned, that burden is discharged by 'presenting evidence or reasons why persons skilled in the art would not recognize in the disclosure a description of the invention defined by the claims.'" *In re Alton*, 76 F.3d 1168, 1175 (Fed. Cir. 1996). If "the specification contains a description of the claimed invention, albeit not *in ipsis verbis* (in the identical words), then the examiner . . . , in order to meet the burden of proof, must provide reasons why one of ordinary skill in the art would not consider the description sufficient." *Id.*

We agree with Appellants that the Examiner has not adequately explained why a person of ordinary skill in the art would not recognize in the disclosure a description of a mantle comprising a "non-bimodal blend terpolymer." It is apparent from the evidence of record that a "terpolymer" can be either a bimodal blend terpolymer or a non-bimodal blend terpolymer (which Appellants refer to as a "conventional" terpolymer).

Thus, the Specification's reference to a terpolymer generically would have been recognized as encompassing both bimodal and non-bimodal terpolymers. The Examiner has not adequately explained why a generic disclosure of both types of terpolymers would not have been recognized by a skilled artisan as describing each of the two types that it encompasses.

"The claimed subject matter need not be described *in haec verba* to satisfy the description requirement. It is not necessary that the application describe the claim limitations exactly, but only so clearly that one having ordinary skill in the pertinent art would recognize from the disclosure that appellants invented processes including those limitations." *In re Herschler*, 591 F.2d 693, 701 (CCPA 1979)(citations omitted). *See also In re Petering*, 301 F.2d 676, 681-82 (CCPA 1962)(disclosure of small genus can describe each species within the genus).

The Examiner argues that "Appellant has not set forth any evidence showing that one skilled in the art would recognize the composition to be non bi-modal from reviewing the disclosure" (Ans. 10). This argument gets the burden of proof backward. If the "the specification contains a description of the claimed invention, albeit not *in ipsis verbis* (in the identical words), then the examiner . . ., in order to meet the burden of proof, must provide reasons why one of ordinary skill in the art would not consider the description sufficient." *In re Alton*, 76 F.3d at 1175. The Examiner has not met the initial burden of showing lack of adequate description.

The Examiner also argues that, "even if the composition disclosed [sic, claimed] was supported by the specification, the appellant has not distinguished the difference between bi-modal and non bi-modal and the criticality of using non bi-modal versus bi-modal" (Ans. 11).

These arguments are unpersuasive. Chen provides evidence that those skilled in the art recognized the difference between bimodal blend copolymers and non-bimodal blend copolymers, and the criticality of using a non-bimodal blend terpolymer is irrelevant to the issue of whether such a terpolymer is adequately described in the Specification.

3. OBVIOUSNESS: SULLIVAN, FARRALLY, AND CHEN

Claims 1-3, 7, 8, and 10 stand rejected under 35 U.S.C. § 103 as obvious in view of Sullivan,[2] Farrally,[3] and Chen.[4] The Examiner finds that Sullivan discloses a golf ball that includes the inner cover layer and outer cover layer recited in claim 1 and that Farrally discloses a golf ball core having the same components, in overlapping amounts, as recited in claim 1 (Ans. 5).

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[2] Sullivan et al., U.S. Patent 6,057,403, issued May 2, 2000.

[3] Farrally et al. (eds.), Science and Golf III: Proc. of the 1998 World Scientific Congress of Golf, pp. 411-412 (1999).

[4] Chen, U.S. Patent 6,562,906, issued May 13, 2003.

Appellants do not dispute that Sullivan and Farrally would have made obvious a golf ball having the core, inner cover layer, and outer cover layer recited in claim 1 (see App. Br. 5).

The Examiner finds that Chen teaches a

> resin useful in golf ball covers and intermediate layers wherein the composition comprises an ionomer terpolymer having 2 to 30% acid and up to 35% of a softening comonomer and the copolymer is 40% to 100% neutralized (See Summary of the Invention and Column 4, lines 1 through 7). Based on the above the ethylene component must be within the range of 35 to 98%. Chen also discloses that the softening comonomer may be an alkyl acrylate . . . and notes that the acid copolymers include ethylene/acrylic acid/n-butyl acrylate (See Columns 3 and 4).

(Ans. 5.) The Examiner concludes that a person of ordinary skill in the art would have considered it obvious to incorporate Chen's composition into the mantle of Sullivan's golf ball, in order to improve resilience (*id.* at 5-6).

We agree with the Examiner's reasoning and conclusion.

Appellants argue that Chen "is specific to bi-modal ionomers . . . [and] is devoid of any reference to neutralization of non-bimodal ionomers, as required by claim 1" (App. Br. 5).

This argument is not persuasive. Claim 1 recites "a mantle comprising a non-bimodal blend terpolymer consisting of 70 to 80% ethylene, 8 to 10.5% acrylic acid and 12 to 20% n-butyl acrylate" (claim 1). Chen discloses a composition that is useful as an intermediate layer material in golf balls (Chen, col. 1, ll. 35-40). The composition is a bimodal blend of a two copolymers, one having a high average molecular weight (the "high copolymer") and one having a low average molecular weight (the "low copolymer") (*id.* at col. 1, ll. 41-50).

As the low copolymer, Chen teaches only bipolymers such as ethylene/acrylic acid or ethylene/methacrylic acid copolymers (*id.* at col. 4, ll. 35-45).

As the high copolymer, Chen expressly discloses "ethylene/(meth) acrylic acid/n-butyl (meth) acrylate" (*id.* at col. 4, ll. 16-17); i.e., a terpolymer containing ethylene, either acrylic acid or methacrylic acid, and either n-butyl acrylate or n-butyl methacrylate. Chen states that the α,β ethylenically unsaturated carboxylic acid (e.g., acrylic acid) "is preferably present in 2-30 (preferably 5-25, most preferably 8-20) wt % of the terpolymer" (*id.* at col. 4, ll. 1-6) and the softening comonomer (e.g., n-butyl acrylate) "is preferably present in 0-35 (alternatively 3-25 or 10-25) wt. %" of the terpolymer (*id.* at col. 4, ll. 1-7). The terpolymer suggested by Chen thus comprises the same components recited in claim 1, in overlapping ranges.

Chen teaches that the low copolymer (bipolymer) and high copolymer (terpolymer) are melt-blended to form "bi-modal ionomers" (*id.* at col. 5, ll. 5-7). In other words, Chen's bimodal blend comprises a terpolymer, but the terpolymer is not itself a bimodal blend of different copolymers. Chen's composition therefore comprises a "non-bimodal blend terpolymer," as recited in claim 1.

Appellants also argue that "although *Chen* includes statements that the acid moieties in the resulting bi-modal ionomer of the high and low copolymers are partially or fully neutralized to a level of about 40% to *about*

100%, **Chen does not teach, suggest or disclose neutralizing a non-bimodal ionomer to 100%**" (App. Br. 5). Appellants argue that the common practice in golf ball design at the time Chen was filed was to approach 100% neutralization but 100% neutralization produced ionomers that were unworkable (*id.* at 5-6). Appellants also argue that "the 33 different golf ball composition examples of *Chen* include copolymer neutralization within the range of 37% to 75%" rather than 100% (*id.* at 6).

This argument is also unpersuasive. As the Examiner has pointed out, Chen states that "[p]referably the high copolymers and low copolymers are partially *or fully* neutralized by alkali metal or alk[a]line earth metal cations. Preferably, about 40% to *about 100%* . . . of the acid moieties in the high copolymers and low copolymers are neutralized." (Chen, col. 3, ll. 28-34, emphasis added.) We agree with the Examiner that about 100% is reasonably read to include 100% itself, especially in view of Chen's teaching that the copolymers can be "fully neutralized."

Appellants have cited no evidence to support their position that the common practice at the time Chen was filed was "to ***approach*** 100% neutralization, but not actually reach" it (App. Br. 6). "Attorney's argument in a brief cannot take the place of evidence." *In re Pearson,* 494 F.2d 1399, 1405 (CCPA 1974). In any case, the relevant time for determining obviousness is "the time the invention was made," 35 U.S.C. § 103(a), not the date of the prior art.

Finally, whether or not Chen provides working examples showing 100% neutralization is immaterial to the obviousness analysis. "[I]n a section 103 inquiry, 'the fact that a specific [embodiment] is taught to be preferred is not controlling, since all disclosures of the prior art, including unpreferred embodiments, must be considered.'" *Merck & Co. v. Biocraft Labs. Inc.*, 874 F.2d 804, 807 (Fed. Cir. 1989).

A preponderance of the evidence of record supports the Examiner's conclusion that the cited references would have suggested the golf ball of claim 1 to a person of ordinary skill in the art. We therefore affirm the rejection of claim 1. Claims 2, 3, 7, 8, and 10 fall with claim 1 because they were not argued separately. 37 C.F.R. § 41.37(c)(1)(vii).

4. OBVIOUSNESS: MELVIN AND CHEN

Claims 1, 2, 4, 5, 7, 8, 10, 13-16, 18, 19, 36, and 37 stand rejected under 35 U.S.C. § 103 as obvious in view of Melvin[5] and Chen (Ans. 7). The Examiner finds that Melvin discloses a four-layer golf ball comprising a core, inner cover layer, and outer cover layer meeting all the limitations of claim 1 (*id.* at 8, citing Melvin, cols. 5-7 (core); col. 12, ll. 30-59 (inner cover layer); and paragraph bridging cols. 14-15 (outer cover layer)). The Examiner relies on Chen as disclosing the mantle layer recited in claim 1, and concludes that the recited references would have made obvious the claimed golf ball to a person of ordinary skill in the art (*id.* at 8-9).

We agree with the Examiner's reasoning and conclusion.

Appellants argue that "[a]s discussed above, *Chen* is specifically directed to bi-modal ionomers . . . [and] does not teach, suggest or disclose neutralizing a non-bimodal ionomer to 100%" (App. Br. 7).

These arguments are unpersuasive for the reasons discussed above.

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[5] Melvin et al., U.S. Patent 5,779,562, issued July 14, 1998.

5. OBVIOUSNESS: MELVIN, CHEN, AND FARRALLY

Claims 3 and 17 stand rejected under 35 U.S.C. § 103 as obvious in view of Melvin, Chen, and Farrally (Ans. 9). The Examiner relies on Melvin and Chen for the teachings discussed above, and finds that Farrally teaches that "the higher the cis, the higher the COR [coefficient of restitution[6]] and also notes that the cis is dependent on the type of catalyst used for the rubber" (*id.*). The Examiner concludes that it would have been obvious to a person of ordinary skill in the art to "have the polybutadiene of any cis, as taught by Farrally et al., in order to obtain the COR desired for the golf ball" (*id.* at 9-10).

We agree with the Examiner's reasoning and conclusion.

Appellants again argue that "*Chen* is devoid of any reference to neutralization of non-bimodal ionomers . . . [and] does not teach, suggest or disclose neutralizing a non-bimodal ionomer to 100%" (App. Br. 7).

These arguments are unpersuasive for the reasons discussed above.

SUMMARY

We reverse the rejection based on the limitation of "a non-bimodal mantle layer" being new matter, but affirm all of the rejections based on 35 U.S.C. § 103.

AFFIRMED

Ssc

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[6] "The C.O.R is a measurement of the amount of energy returned in an inelastic collision, such as the impact between the golf ball and the club face" (Spec. 5).

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